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EXAMINER

BAUM, STUART F

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1638

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/602,898 | <b>Applicant(s)</b><br>BOYES ET AL. |  |
|                              | <b>Examiner</b><br>Stuart F. Baum    | <b>Art Unit</b><br>1638             |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4,6-13,24-28 and 51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-13,24-28 and 51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/23/04, 6/28/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-4, 6-13, 24-28 and 51 are pending.
2. Applicant's election of Group I, claims 1-13, and 24-28, including SEQ ID NO:1 in the reply filed on 11/30/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 5, 14-23 and 29-50 have been canceled.

Claim 51 has been newly added and is drawn to the elected invention.

3. Claims 1-4, 6-13, 24-28 and 51 including SEQ ID NO:1 are examined in the present office action.

### ***Claim Objection***

4. The amendment to the claims filed 11/30/2005 is not in compliance with 37 CFR 1.121(c). Amendments to a claim must be made by rewriting the entire claim with all changes (e.g., additions and deletions) as indicated in this subsection, except when the claim is being canceled. Each amendment document that includes a change to an existing claim, cancellation of an existing claim or addition of a new claim, must include a complete listing of all claims ever presented, including the text of all pending and withdrawn claims, in the application. The claim listing, including the text of the claims, in the amendment document will serve to replace all prior versions of the claims, in the application. In the claim listing, the status of every claim must be indicated after its claim number by using one of the following identifiers in a parenthetical expression: (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented),

Art Unit: 1638

(New), and (Not entered). In particular, Applicants have indicated in the Remarks of the Response to Restriction Requirement, filed 11/30/2005, that claims 29-50 are canceled, but Applicants failed to include claims 29-50 in the amended claim set. Correction is requested.

***Information Disclosure Statement***

5. Only the titles listed in the International Search Report have been considered. The recitation “International Search Report from PCT/US03/20001” is not appropriate for printing on the front of a patent.

***Brief Description of the Drawing***

6. The Specification is objected to because the drawings are not referred to properly. If the drawings show Figures 2A and 2B, then the Brief Description of the Drawings should recite “Figures 2A-2B”, instead of “Figure 2”. Correction is requested.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-4, 6-13, 24-26, and 51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejection includes dependent claims.

Claims 1, 24 and 27 are indefinite in the recitation “AGB1”. The sole designation of an amino acid sequence by “AGB1” is arbitrary and creates ambiguity in the claims. For example,

Art Unit: 1638

the amino acid sequence in this application could be designated by some other arbitrary means, or the assignment of said name could be arbitrarily changed to designate a different amino acid sequence. If either event occurs, one's ability to determine the metes and bounds of the claim would be impaired. See *In re Hammack*, 427 F.2d 1378, 1382; 166 USPQ 204, 208 (CCPA 1970). Amendment of the claim to refer to a specific SEQ ID NO would obviate this rejection.

The term "substantially" in claims 1 and 24 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claims 1 and 24 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: wherein the endogenous AGB1 gene expression is reduced.

### ***Written Description***

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-4, 6-13, 24-28 and 51 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to a method for altering a plant agronomic trait comprising introducing in to a plant cell an expression cassette comprising a nucleotide sequence operably linked to a promoter, wherein the nucleotide sequence is antisense to a plant AGB1 or an AGB1 ortholog, or comprises an inverted repeat of AGB1 or an AGB1 ortholog, or encodes a dsRNA, wherein the dsRNA comprises a first RNA complementary to at least 25 consecutive nucleotides of a plant AGB1 or an AGB1 ortholog and a second RNA substantially complementary to the first RNA, or wherein the plant AGB1 has the sequence set forth in SEQ ID NO:1; or a transgenic plant having stably integrated into its genome an expression cassette comprising said nucleotide sequence, or a transgenic plant that is not Arabidopsis wherein the plant has a disruption in a gene that is an AGB1 ortholog endogenous to the plant.

Applicants disclose that sequence similarity searches suggest the Arabidopsis genome sequence contains one  $G\beta$  (AGB1) subunit of the heterotrimeric G-protein (page 2, 1<sup>st</sup> paragraph). Applicants disclose the nucleotide sequence of the coding region of the Arabidopsis gene AGB1 is shown in SEQ ID NO:1 and the polypeptide sequence in SEQ ID NO:2 (page 20, lines 24-25). Applicants disclose that numerous orthologs of the Arabidopsis gene AGB1 from multiple species are known and an alignment was performed that enabled Applicants to list percent identities of the encoded proteins (paragraph bridging pages 20 and 21).

The Office contends that the accession numbers of the AGB1 orthologous sequences and the alignment of said proteins has not been submitted for the Office to consider. Applicant is invited to submit the Accession numbers in an IDS and an alignment in a 1.132 declaration.

The Applicants do not identify essential regions of AGB1 protein encoded by SEQ ID NO:1, nor do Applicants describe any antisense sequence to any AGB1 or AGB1 ortholog, nor any inverted repeat of AGB1 or AGB1 ortholog, or any nucleotide sequence encoding a RNA complementary to at least 25 consecutive nucleotides of a plant AGB1 or any AGB1 ortholog and another nucleotide sequence encoding a RNA substantially complementary to the former RNA sequence.

The Federal Circuit has recently clarified the application of the written description requirement to inventions in the field of biotechnology. See University of California v. Eli Lilly and Co., 119 F.3d 1559, 1568, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997). In summary, the court stated that a written description of an invention requires a precise definition, one that defines the structural features of the chemical genus that distinguishes it from other chemical structures. A definition by function does not suffice to define the genus because it is only an indication of what the gene does, rather than what it is. The court goes on to say, "A description of a genus of cDNAs may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to members of the genus, which features constitute a substantial portion of the genus." *See University of California v. Eli Lilly and Co.*, 119 F.3d 1559; 43 USPQ2d 1398, 1406 (Fed. Cir. 1997).

Applicants fail to describe a representative number of polynucleotide sequences encoding a AGB1 protein falling within the scope of the claimed genus of polynucleotides which comprise a nucleotide sequence encoding a RNA complementary to at least 25 consecutive nucleotides of a plant AGB1 or any AGB1 ortholog and another nucleotide sequence encoding a RNA

substantially complementary to the former RNA sequence. Applicants only describe a single sequence of SEQ ID NO:1. Furthermore, Applicants fail to describe structural features common to members of the claimed genus of polynucleotides. Hence, Applicants fail to meet either prong of the two-prong test set forth by *Eli Lilly*. Furthermore, given the lack of description of the necessary elements essential for the AGB1 protein, it remains unclear what features identify an *Arabidopsis* AGB1 protein. Since the genus of AGB1 proteins has not been described by specific structural features, the specification fails to provide an adequate written description to support the breadth of the claims.

#### ***Enablement***

9. Claims 1-4, 6-13, 24-28 and 51 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claimed invention is not supported by an enabling disclosure taking into account the *Wands* factors. *In re Wands*, 858/F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988). *In re Wands* lists a number of factors for determining whether or not undue experimentation would be required by one skilled in the art to make and/or use the invention. These factors are: the quantity of experimentation necessary, the amount of direction or guidance presented, the presence or absence of working examples of the invention, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability of the art, and the breadth of the claim.

The claims are drawn to a method for altering a plant agronomic trait comprising introducing in to a plant cell an expression cassette comprising a nucleotide sequence operably linked to a promoter, wherein the nucleotide sequence is antisense to a plant AGB1 or an AGB1 ortholog, or comprises an inverted repeat of AGB1 or an AGB1 ortholog, or encodes a dsRNA, wherein the dsRNA comprises a first RNA complementary to at least 25 consecutive nucleotides of a plant AGB1 or an AGB1 ortholog and a second RNA substantially complementary to the first RNA, or wherein the plant AGB1 has the sequence set forth in SEQ ID NO:1; or a transgenic plant having stably integrated into its genome an expression cassette comprising said nucleotide sequence, or a transgenic plant that is not Arabidopsis wherein the plant has a disruption in a gene that is an AGB1 ortholog endogenous to the plant.

Applicants disclose that sequence similarity searches suggest the Arabidopsis genome sequence contains one  $G\beta$  (AGB1) subunit of the heterotrimeric G-protein (page 2, 1<sup>st</sup> paragraph). Applicants disclose the nucleotide sequence of the coding region of the Arabidopsis gene AGB1 is shown in SEQ ID NO:1 and the polypeptide sequence in SEQ ID NO:2 (page 20, lines 24-25). Applicants disclose that numerous orthologs of the Arabidopsis gene AGB1 from multiple species are known and an alignment was performed that enabled Applicants to list percent identities of the encoded proteins (paragraph bridging pages 20 and 21).

The Office contends that the accession numbers of the AGB1 orthologous sequences and the alignment of said proteins has not been submitted for the Office to consider. Applicant is invited to submit the Accession numbers in an IDS and an alignment in a 1.132 declaration.

The state-of-the-art teaches antisense constructs can behave unpredictably when transformed into a heterologous plant species. Colliver et al (1997, Plant Mol. Biol. 35:509-522)

Art Unit: 1638

showed that transformation of bird's foot trefoil with a construct that was antisense to bean chalcone synthase unexpectedly resulted in transformants with *increased* levels of chalcone synthase transcripts (page 519, left column, 2<sup>nd</sup> paragraph). Emery et al (2003, Current Biology 13:1768-1774) disclose experiments in which a target sequence of a micro-RNA was changed by two base-pairs. The altered base-pairs caused the complementary micro-RNA not to bind to the target sequence, which subsequently led to an increased expression of the target sequence's encoded protein (page 1769, right column, 2<sup>nd</sup> full paragraph). Given the state-of-the-art as discussed *supra*, the Office contends using heterologous antisense molecules, heterologous inverted repeats or heterologous dsRNA to reduce expression of the endogenous homologous gene is not enabled.

Applicants' claims 6-13 are drawn to specific traits which Applicants claim can be altered using the claimed invention. Applicants do not disclose examples in which the claimed invention is used to alter the claimed traits. Instead, Applicants disclose two mutant alleles of the AGB1 gene from Arabidopsis, i.e., agb1-1 which makes a truncated protein and agb1-2 which fails to accumulate a transcript, which the Office interprets to be a null mutation because no protein is generated (paragraph bridging pages 46-47). Applicants disclose a Table in which a particular phenotype is compared between the mutant alleles and the wild-type plant (see Table 1, pages 47-52). The Office has reviewed Table 1 and correlated the claimed altered traits to the traits as listed in the table. The Office contends that in only one instance of the claimed altered traits, did the mutant alleles exhibit an altered phenotype when compared to the wild-type plant. The Office contends that for seed yield, (claim 9) the mutants exhibited a lower number of seeds per half silique when compared to the wild-type plant. For the other claimed traits, the Office

Art Unit: 1638

contends that there is no statistical difference between the mutant alleles and the wild-type plant. The Office acknowledges that seed yield is reduced in the mutants, but the Office contends that Applicants have not taught how one skilled in the art would use a plant with a lower seed yield. The Office contends that using the claimed method to mimic the phenotype of a plant with a mutant *agb1* gene is not enabled because Applicants' own data indicates that a plant possessing a mutant *agb1* gene does not produce any of the claimed altered traits except for seed yield which is reduced.

Re: claims 27 and 28 are drawn to a transgenic plant that is not *Arabidopsis* wherein the plant has a disruption in the *AGB1* orthologous gene. Applicants disclose the *agb1-1* mutant is the result of a point mutation which affects splicing. Applicants' Table 1 discloses many examples in which the *agb1-1* mutant phenotype is not statistically different from the phenotype of the wild-type plant. Therefore, by Applicants' own admission, any disruption to the *AGB1* gene will not always produce the expected results, and Applicants have not disclosed how one skilled in the art would use a plant comprising any of the claimed RNA molecules wherein the plant has a wild-type phenotype, and therefore the claimed invention is not enabled.

Applicants have not disclosed how one makes or isolates any of the sequences that are encompassed by Applicants' broad claims. Applicants have not taught which regions of the respective polynucleotides can be used to amplify any of said polynucleotides or which regions can be used as a probe to isolate any of said polynucleotide sequences.

In the absence of guidance, undue trial and error experimentation would be required for one of ordinary skill in the art to screen through the multitude of non-exemplified sequences, either by using non-disclosed fragments of SEQ ID NO:1 or non-disclosed fragments of any

Art Unit: 1638

nucleic acid encoding an AGB1 protein as probes or by designing primers to undisclosed regions of SEQ ID NO:1 or non-disclosed fragments of any nucleic acid encoding an AGB1 protein and isolating or amplifying fragments, subcloning the fragments, producing expression vectors and transforming plants therewith, in order to identify those, if any, that when over-expressed produce a plant with any of the claimed traits as listed in claims 6-13, even though Applicants' own mutants do not produce the claimed phenotypes.

Therefore, given the breadth of the claims; the lack of guidance and examples; the unpredictability in the art; and the state-of-the-art as discussed above, undue experimentation would be required to practice the claimed invention, and therefore the invention is not enabled.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 26 is rejected under 35 U.S.C. 102(b) as being anticipated by Mahajan et al (May, 2001, U.S. Patent Number 6,235,972 B1).

The claim is drawn to transgenic seed from the plant of claim 24.

The Office interprets this to mean any transgenic seed from the plant of claim 24, even seed that do not carry the introduced nucleotide sequence. Crossing the plant of claim 24 with another transgenic plant will yield seed that do not carry the nucleotide sequence of claim 24.

Due to Mendelian inheritance of genes, a single gene introduced into a parent plant would only be transferred at most to half the female gametes. This translates into only one half of the progeny having at least a single copy of the transgene and one half of the progeny would

Art Unit: 1638

not carry a copy of the transgene. The amendment of the claim to recite that the seed comprise the expression cassette that was introduced into the parent seed would overcome the rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lease et al (2001, The Plant Cell 13:2631-2641).

The claims are drawn to a transgenic plant that is not Arabidopsis, wherein the plant has a disruption in a gene that is an AGB1 ortholog endogenous to the plant, or wherein the plant is a dicot, monocot, a gymnosperm, a member of the genus Brassica, or Brassica napus.

Lease et al disclose an Arabidopsis plant that has a mutation in the AGB1 gene, wherein the mutant plant exhibits an altered silique morphology (page 2633, right column), a shortening of the floral bud length (page 2634, right column, 1<sup>st</sup> full paragraph), rounded leaves and short petioles (page 2634, right column, 2<sup>nd</sup> full paragraph). Lease et al also disclose the agb1-1 is a null allele (page 2635, right column).

Lease et al do not disclose a transgenic plant that is not Arabidopsis, wherein the plant has a disruption in the AGB1 ortholog endogenous gene of the plant.

Given the recognition of those of ordinary skill in the art the value of using Arabidopsis as a model system, and that mutant phenotypes that are exhibited in Arabidopsis will also be exhibited in other plant species, and given the teachings of Lease et al who disclose an Arabidopsis plant with an altered morphology due to a disruption in the AGB1 gene, one of ordinary skill in the art would recognize that mutating an AGB1 homologous gene in another plant will produce the same phenotype as the phenotype disclosed by Lease et al. Applicants' claims are drawn to a transgenic plant that has a disruption in the AGB1 ortholog and one of ordinary skill in the art would be apprised of using for example, a T-DNA approach to mutagenize a plant to produce the claimed mutant.

Thus the claimed invention would have been *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, especially in the absence of evidence to the contrary.

12. Claims 1-4, 6-13, 24-26 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lease et al (2001, The Plant Cell 13:2631-2641) taken with Harada et al (May 2001, U.S. 6,235,975 B1) and further taken with Weiss et al (1994, PNAS 91:9554-9558).

The claims are drawn to a method for altering a plant agronomic trait comprising introducing in to a plant cell an expression cassette comprising a nucleotide sequence operably linked to a promoter, wherein the nucleotide sequence is antisense to a plant AGB1 or an AGB1 ortholog, or comprises an inverted repeat of AGB1 or an AGB1 ortholog, or encodes a dsRNA, wherein the dsRNA comprises a first RNA complementary to at least 25 consecutive nucleotides of a plant AGB1 or an AGB1 ortholog and a second RNA substantially complementary to the

Art Unit: 1638

first RNA, or wherein the plant AGB1 has the sequence set forth in SEQ ID NO:1; or a transgenic plant having stably integrated into its genome an expression cassette comprising said nucleotide sequence.

Lease et al disclose an Arabidopsis plant that has a mutation in the AGB1 gene, wherein the mutant plant exhibits an altered silique morphology (page 2633, right column), a shortening of the floral bud length (page 2634, right column, 1<sup>st</sup> full paragraph), rounded leaves and short petioles (page 2634, right column, 2<sup>nd</sup> full paragraph). Lease et al also disclose the agb1-1 is a null allele (page 2635, right column).

Lease et al do not disclose a method for altering a plant agronomic trait using antisense, or inverted repeats or dsRNA, to down regulate the expression of the endogenous AGB1 gene in a plant.

Weiss et al disclose the nucleic acid sequence for the Arabidopsis AGB1 and maize ortholog of the Arabidopsis AGB1, ZGB1.

Harada et al disclose antisense techniques that can be used to down regulate an endogenous gene (see for example column 12, lines 32-45).

Given the recognition of those of ordinary skill in the art the value of using Arabidopsis as a model system, and that mutant phenotypes that are exhibited in Arabidopsis will also be exhibited in other plant species, and given the recognition of those of ordinary skill in the art that antisense technologies can be used to mimic a mutant phenotype, and given the teachings of Lease et al who disclose an Arabidopsis plant with an altered morphology due to a disruption in the AGB1 gene, one of ordinary skill in the art would be motivated to down regulate the AGB1 gene because of the teachings of Lease et al, and to use antisense technologies as taught by

Art Unit: 1638

Harada et al, and to modify the teachings of Harada et al so as to incorporate the nucleic acids encoding the AGB1 as taught by Weiss et al. Given these three teachings, one of ordinary skill in the art would be motivated to combine all three so as to disrupt AGB1 or ZGB1 expression in Arabidopsis or Zea mays.


Thus the claimed invention would have been *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, especially in the absence of evidence to the contrary.

13. No claims are allowed.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stuart F. Baum whose telephone number is 571-272-0792. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached at 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.

  
Stuart F. Baum Ph.D.  
Patent Examiner  
Art Unit 1638  
January 30, 2006